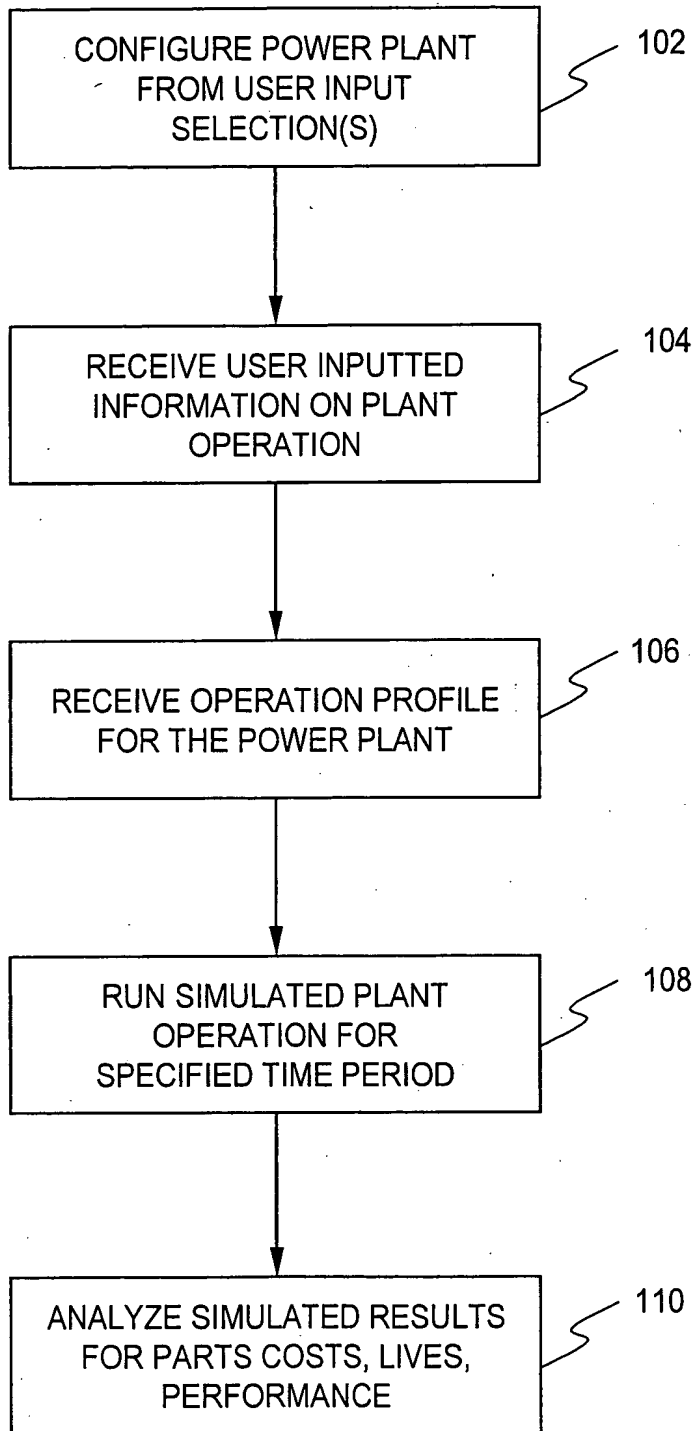




FIG. 1

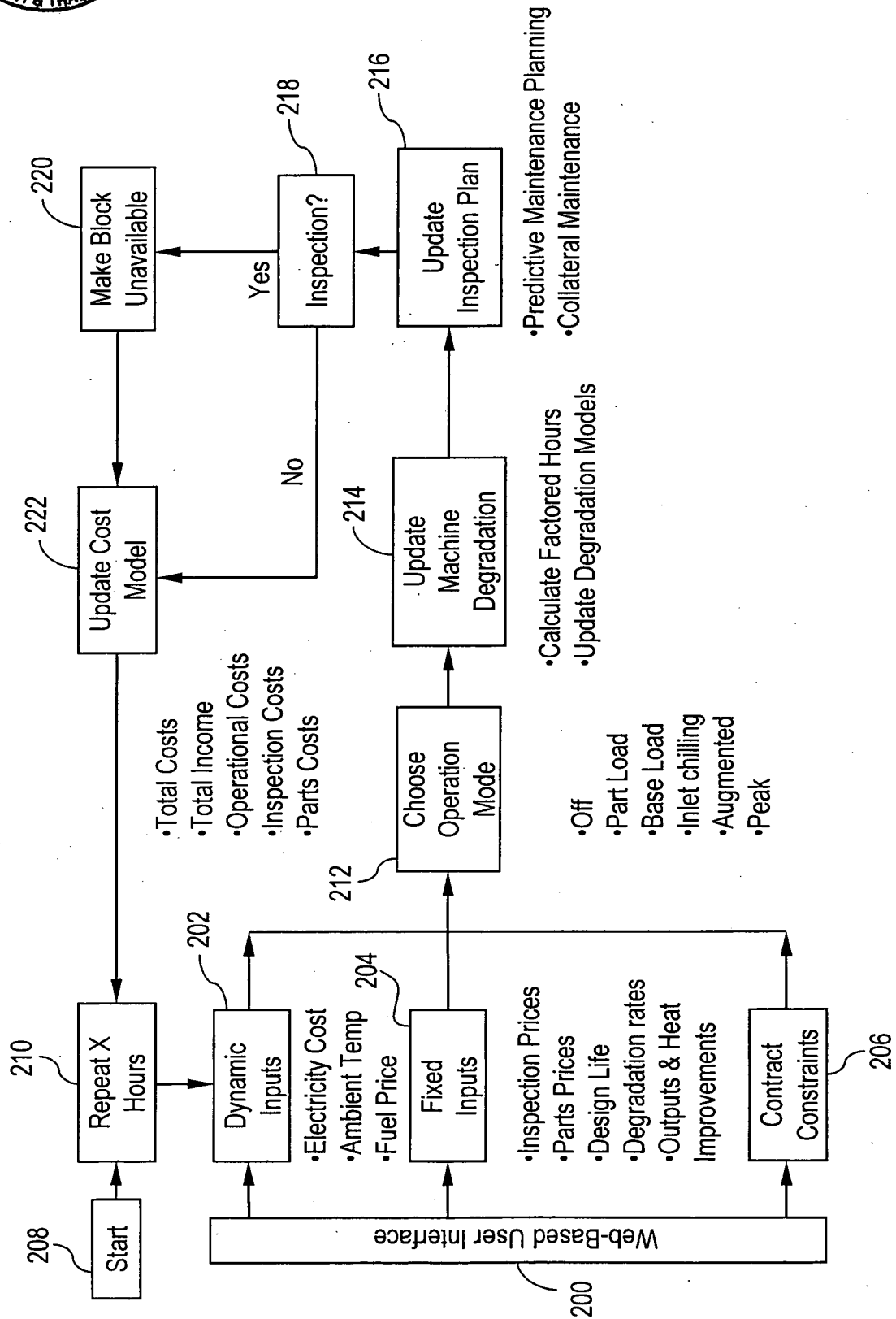
100





2/10

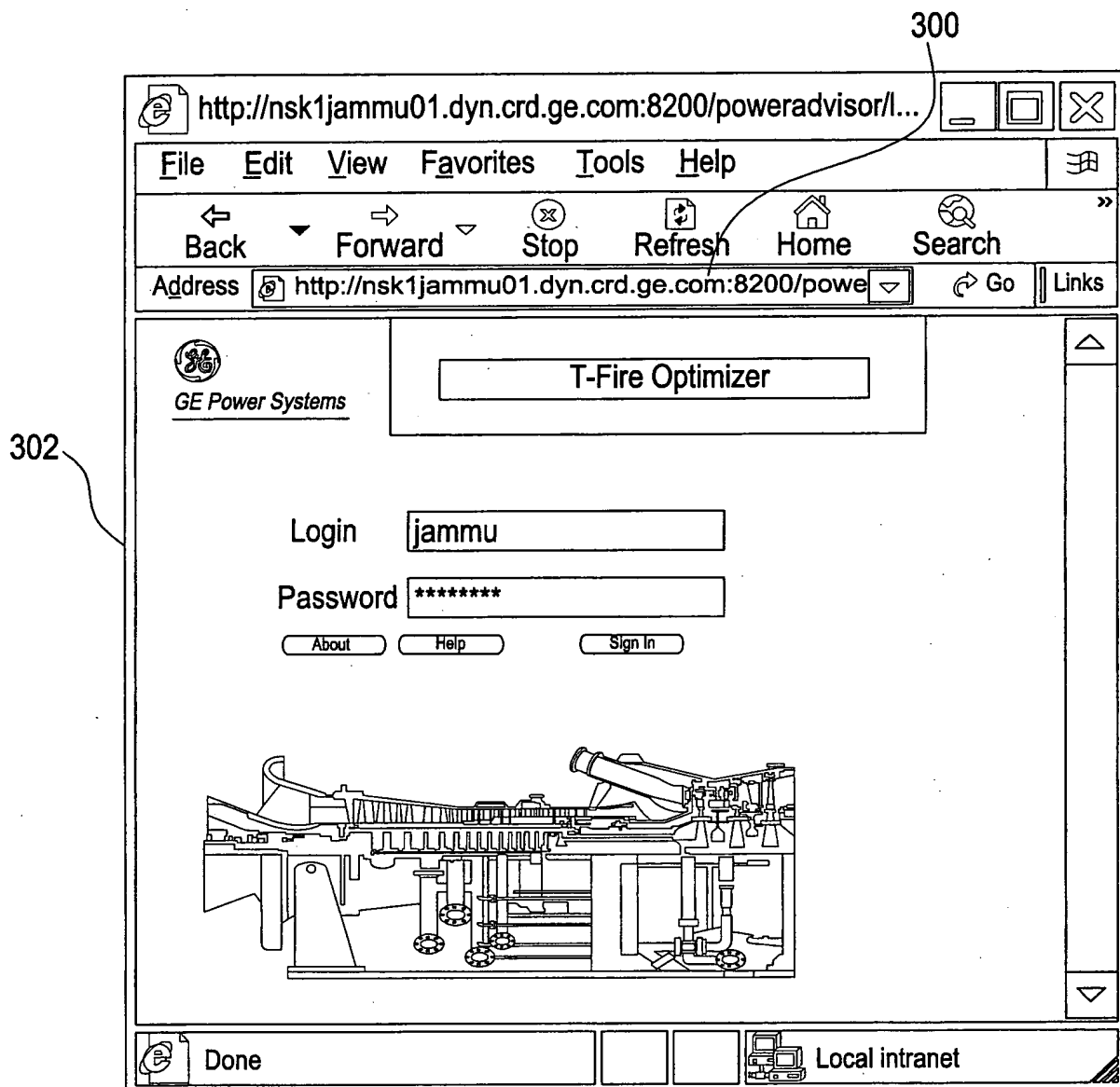
FIG. 2





3/10

FIG. 3





4/10

FIG. 4

GE Power Systems - Welcome To T-Fire Optimizer - Microsoft Internet Explorer provided by IMS...

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites History Mail

Address http://nsl1jammu01.dyn.crd.ge.com:8200/poweradvisor/home.jsp Go Links

GE Power Systems T-Fire Optimizer

Go to gepower.com

Key Word Search

Welcome, Vinay Jammu Logout

402

Home Plant Perf. Curves Profiles Inspections Constraints Financials Run Results

404

Welcome to T-Fire Optimizer

406

Configure New Plant

Based on:

Standard 2x9FA Selkirk

Standard 2x7FA Waterford

Standard 2x7EA West Georgia

9FA Single Shaft CAPCO

7FA Single Shaft PEPCO

OR

Your Previous Plants:

Select Plant

Configure

Select And Run Scenario Set

Default\_Scenario\_Set

Run Edit

OR

Create New Scenario Set With Name:

CreateNew

400

408

T-Fire Optimizer News

4/10/01 New uprate models from uprate database loaded into T-Fire Optimizer. (more...)

3/26/01 Integration with COSMOS complete. (more...)

2/5/01 New plants model from Japan added to T-Fire Optimizer (more...)

GE Home

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Local intranet

5/10



FIG. 5

Modify Plant Microsoft Internet Explorer provided by IMS@GERD

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites History Mail Print Edit

Address <http://nsk1jammu01.dyn.crd.ge.com:8200/poweradvisor/editplant.jsp> Go Links

GE Power Systems T-Fire Optimizer

Go to [gepower.com](http://gepower.com)

Key Word Search

Welcome, Vinay Jammu [Logout](#)

Home Plant Perf. Curves Profiles Inspections Constraints Financials Run Results

Modify Plant : Def\_PlantBase

Select Block:  
Def\_Block1  
Def\_Block2

Def\_Block1

Filters Chiller Generator HRSC Steam Turbine Condenser Generator Steam User

Add Block Delete Block Apply To Run Scenario Set

Local intranet

500

6/10



FIG. 6

GE Power Systems - Welcome To Power Advisor - Microsoft Internet Explorer provided by IMS...

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites History Mail

Address http://nsk1jammu01.dyn.crf.ge.com:8200/poweradvisor/editscenario.jsp?ScenarioN

GE Power Systems T-Fire Optimizer

Go to gepower.com

Key Word Search

Welcome, Vinay Jammu

Home Plant Perf. Curves Profiles Inspections Constraints Financials Run Results

Edit Scenario: DEF\_SCENARIO

| Plant |               | Operational Rules |             |
|-------|---------------|-------------------|-------------|
| Plant | Def_PlantBase | Operational Rules | Def_PlantOp |

| Inspections |                     | Constraints |                  |
|-------------|---------------------|-------------|------------------|
| Inspection  | Extended Inspection | Constraints | Constraint set 1 |

| External Condition Profiles |                    | Performance Curves |                   |
|-----------------------------|--------------------|--------------------|-------------------|
| Ambient Temperature         | Hot Summer Profile | Chiller Curves     | Special chiller 1 |
| Electricity Price           | High Summer Prices | NOx Curves         | Low NOx curves    |
| Fuel Price                  | Normal Fuel Price  | Condenser Curves   | Condensor 1       |

Save Save As Go to Run Screen Run Scenario Set

Done Local intranet

600



7/10

FIG. 7

Muddy Turbine - Microsoft Internet Explorer provided by IMS@GECRD

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites History Mail

Address <http://nsk1jammu01.dyn.crf.ge.com:8200/poweradvisor/home.jsp> Go Links

GE Power Systems T-Fire Optimizer

Go to [gepower.com](http://gepower.com)

Key Word Search

Welcome, Vinay Jammu [Logout](#)

Home Plant Perf. Curves Profiles Inspections Constraints Financials Run Results

| Compressor: Def_Compressor |         |                       |          |
|----------------------------|---------|-----------------------|----------|
| Parts                      |         | Cost                  |          |
| Units/Set                  | 1       | Cost Price (\$)/Set   | 500000.0 |
| Fallout (%)                | 0       | Repair Price (\$)/Set | 100000.0 |
| Design Life (Hrs)          | 14400.0 |                       |          |
| Service Time (Hrs)         | 26.0    |                       |          |

| Performance Degradation           |      | Price                |           |
|-----------------------------------|------|----------------------|-----------|
| Perf. Degradation (%)/Year        | 0.1  | Sale Price (\$)/Set  | 1000000.0 |
| Perf. Recovered (%) At Inspection | 50.0 | Scrap Value (\$)/Set | 0.0       |

| Uprate             |      | Margin            |      |
|--------------------|------|-------------------|------|
| Heat Improvement   | 5    | Repair Margin (%) | 10.0 |
| Output Improvement | 10.0 |                   |      |

Def\_Block1  
Def\_GT1

Def\_Compressor  
Def\_Combustor  
Def\_S1Bucket  
Def\_S2Bucket  
Def\_S3Bucket  
Def\_S1Nozzle  
Def\_S2Nozzle  
Def\_S3Nozzle

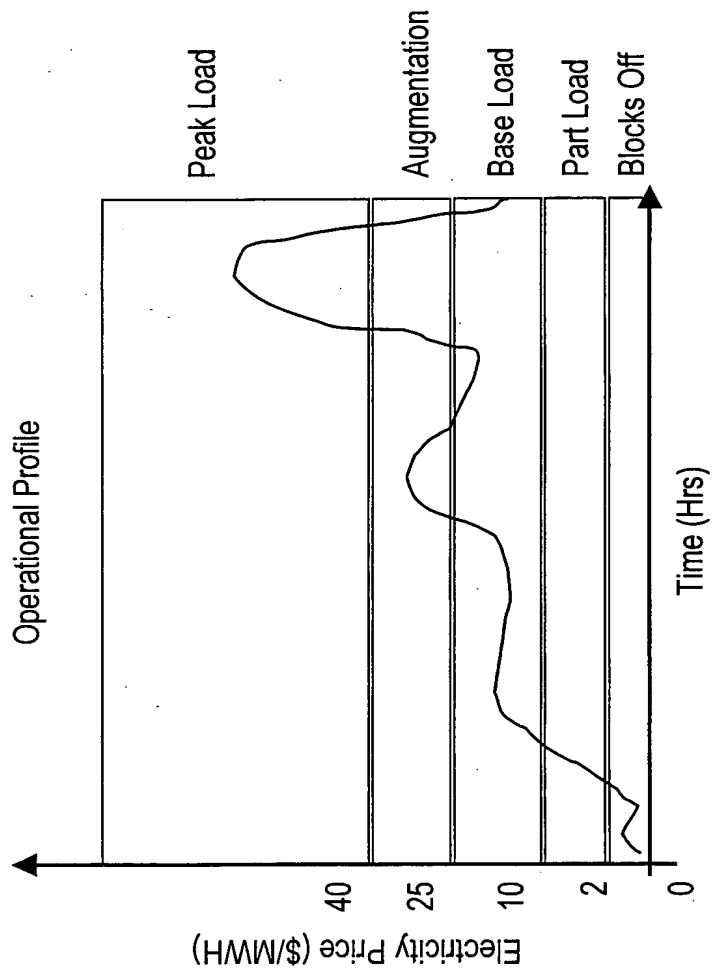
Save Run Cancel Select From Apply To

Done Local intranet

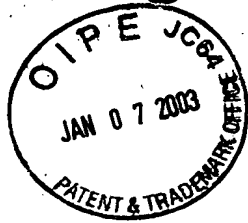
700



FIG. 8







9/10

FIG. 9

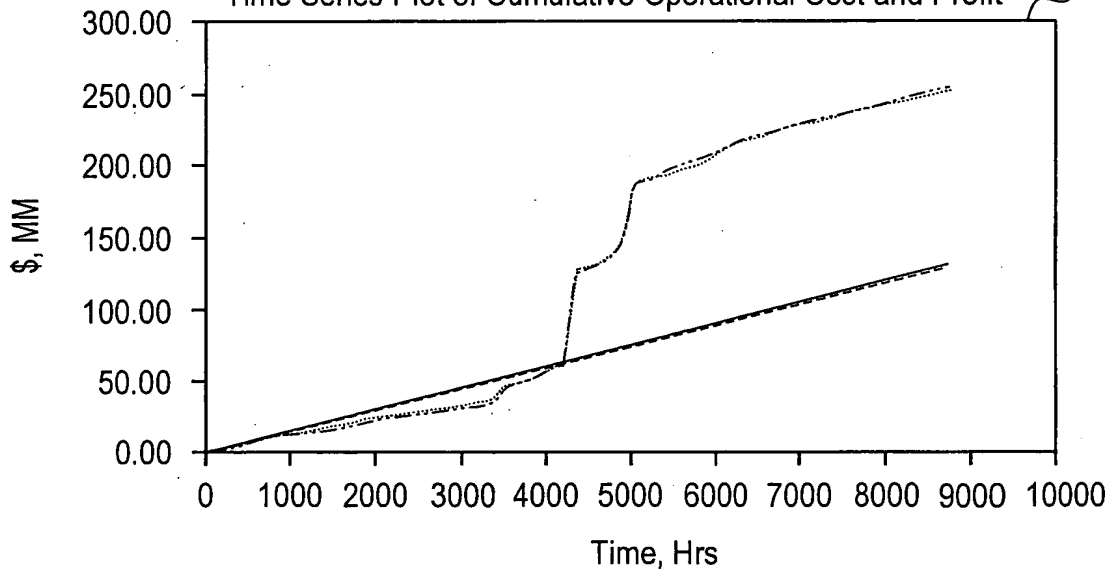
Customer Operational Cost and Profit

| Customer Financials              | Baseline | Improved Compressor | Difference |
|----------------------------------|----------|---------------------|------------|
| Customer Operation Cost (\$, MM) | 130.79   | 130.45              | -0.34      |
| Customer Profit (\$, MM)         | 252.52   | 254.62              | 2.10       |

Constraint Violation: Max Plant Output

| Plant Max Output Constraint            | Baseline | Improved Compressor | Difference |
|--|----------|---------------------|------------|
| Hrs of Plant Constraint Violated (Hrs) | 1572.00  | 3294.00             | 1722.00    |
| MW of Plant Output Violated (MW)       | 20429.56 | 48896.37            | 28466.81   |
| \$ Lost (\$, MM)                       | 7.89     | 10.51               | 2.62       |

Time Series Plot of Cumulative Operational Cost and Profit



- Baseline Cost
- ..... Baseline Profit
- Improved Compressor Operations Cost
- .-.- Improved Compressor Profit

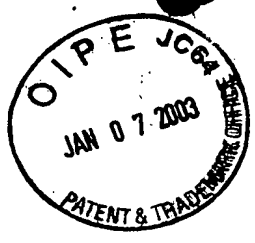
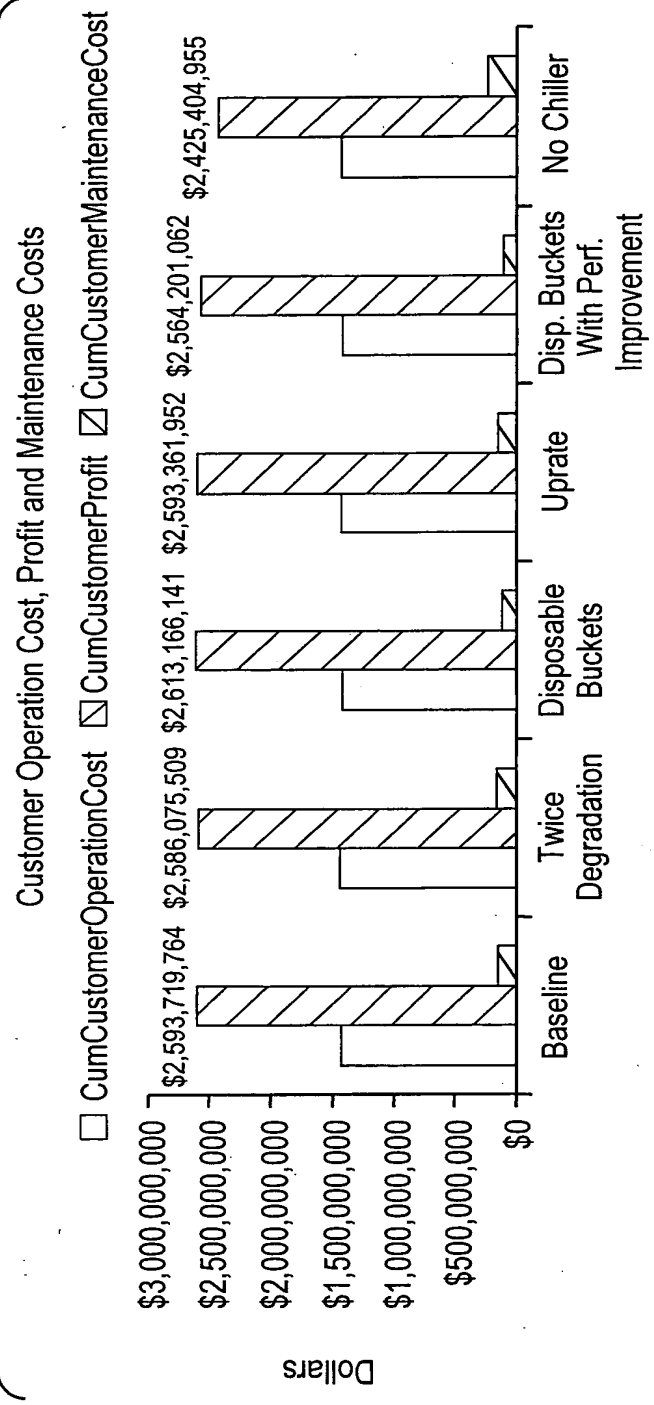


FIG. 10



Difference In Customer Total Profit (Profit-Maintenance Cost) From Base Line

